

We claim:

1. A method for encapsulating a water-soluble agent comprising:
- 5 (a) forming a microemulsion containing the agent;
- (b) adding the microemulsion to a first solvent comprising one or more polymers, thereby forming a dispersion;
- (c) adding the dispersion to a second solvent which is a nonsolvent for one or more polymers;
- 10 wherein following step (c), the microemulsion is encapsulated by the one or more polymers in the form of microparticles.
2. The method of claim 1, wherein the first solvent is completely miscible with the second solvent.
- 15 3. The method of claim 1, wherein the first solvent is partially miscible with the second solvent.
4. The method of claim 1, wherein the agent is a water-soluble drug.
- 20 5. The method of claim 1, wherein the microemulsion comprises about 10% to 60% oil by volume.
6. The method of claim 1, wherein the microemulsion further comprises a surfactant.
- 25 7. The method of claim 6, wherein the surfactant is selected from the group consisting of polyoxyethylene sorbitan monoleate alone, sorbitan monolaurate, and mixtures thereof.
- 30 8. The method of claim 7, wherein the microemulsion comprises about 0.1% and 60% surfactant by volume.
9. The method of claim 1, wherein the microemulsion further comprises a co-surfactant.

10. The method of claim 1, wherein the polymer is selected from the group consisting of polyvinyl alcohols, polyvinyl ethers, polyamides, polyvinyl esters, polyvinylpyrrolidone, polyglycolides, polyurethanes, alkyl celluloses, cellulose esters, hydroxypropyl derivatives of celluloses and cellulose esters, preformed polymers of poly alkyl acrylates, polyethylene, polystyrene, polyactic acid, polyglycolic acid, poly(lactide-co-glycolide), polycaprolactones, polybutyric acids, polyvaleric acid and copolymers thereof, alginates, chitosans, gelatin, albumin, zein and combinations thereof.

11. The method of claim 10, wherein the polymer is poly(lactide-co-glycolide).

12. The method of claim 1, wherein the polymer has a molecular weight in the range of 1000 daltons to 150,000 daltons.

13. The method of claim 12, wherein the polymer has a molecular weight in the range of 3000 daltons to 150,000 daltons.

14. The method of claim 1, wherein the polymer is present at a concentration of about 0.01% to 30% (w/w).

15. The method of claim 14, wherein the polymer is present at a concentration of about 0.1% to 10% (w/w).

16. The method of claim 1, wherein the first solvent is an organic solvent.

17. The method of claim 1, wherein the first solvent is selected from the group consisting of ethyl acetate, benzyl alcohol, and propylene carbonate.

18. The method of claim 1, wherein the second solvent is water.

19. The method of claim 1, further comprising the step of adding a second solvent prior to the addition of the dispersion.

20. A microparticle composition prepared by the process of claim 1.

21. A microparticle composition comprising a microemulsion containing a water-soluble agent and one or more polymers.
22. The composition of claim 21, wherein the polymer encapsulates the
5 microemulsion.
23. The composition of claim 21, wherein the agent is a water-soluble drug.
24. The composition of claim 21, wherein the microemulsion comprises about
10 10% to 60% oil by volume.
25. The composition of claim 21, wherein the microemulsion further comprises a surfactant.
- 15 26. The composition of claim 25, wherein the surfactant is selected from the group consisting of polyoxyethylene sorbitan monooleate alone, sorbitan monolaurate, and mixtures thereof.
27. The composition of claim 26, wherein the microemulsion comprises about
20 0.1% and 60% surfactant by volume.
28. The composition of claim 21, wherein the microemulsion further comprises a co-surfactant.
- 25 29. The composition of claim 21, wherein the polymer is selected from the group consisting of polyvinyl alcohols, polyvinyl ethers, polyamides, polyvinyl esters, polyvinylpyrrolidone, polyglycolides, polyurethanes, alkyl celluloses, cellulose esters, hydroxypropyl derivatives of celluloses and cellulose esters, preformed polymers of poly alkyl acrylates, polyethylene, polystyrene, polyactic acid, polyglycolic acid,
30 poly(lactide-co-glycolide), polycaprolactones, polybutyric acids, polyvaleric acid and copolymers thereof, alginates, chitosans, gelatin, albumin, zein and combinations thereof.

30. The composition of claim 29, wherein the polymer is poly(lactide-co-glycolide).

31. The composition of claim 21, wherein the polymer has a molecular weight in
5 the range of 1000 daltons to 150,000 daltons.

32. The composition of claim 31, wherein the polymer has a molecular weight in
the range of 3000 daltons to 150,000 daltons.

10 33. The composition of claim 21, wherein the polymer is present at a
concentration of about 0.01% to 30% (w/w).

34. The composition of claim 33, wherein the polymer is present at a
concentration of about 0.1% to 10% (w/w).

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